

Cold Region Public Housing Authority Heat Pump Conversion Concept Demonstration



Village of Potsdam Housing Authority and Clarkson University

The Challenge

Providing environmentally friendly heating and air conditioning solutions in cold region housing authorities.

- Potsdam New York has a heating cost index of 356, compared to US average of 139.
- Low temperature performance of air-air heat pumps is a challenge.
- Energy efficiency of air-air heat pumps in cold weather is not well documented.
- The impact of heat pumps on indoor air quality has not been field tested in cold climates.
- Marginalized communities often experience poor indoor air quality.
- Heating cost impacts are particularly challenging for marginalized communities.

Village of Potsdam Housing Authority (VPHA), Robert Santamoore, Executive Director

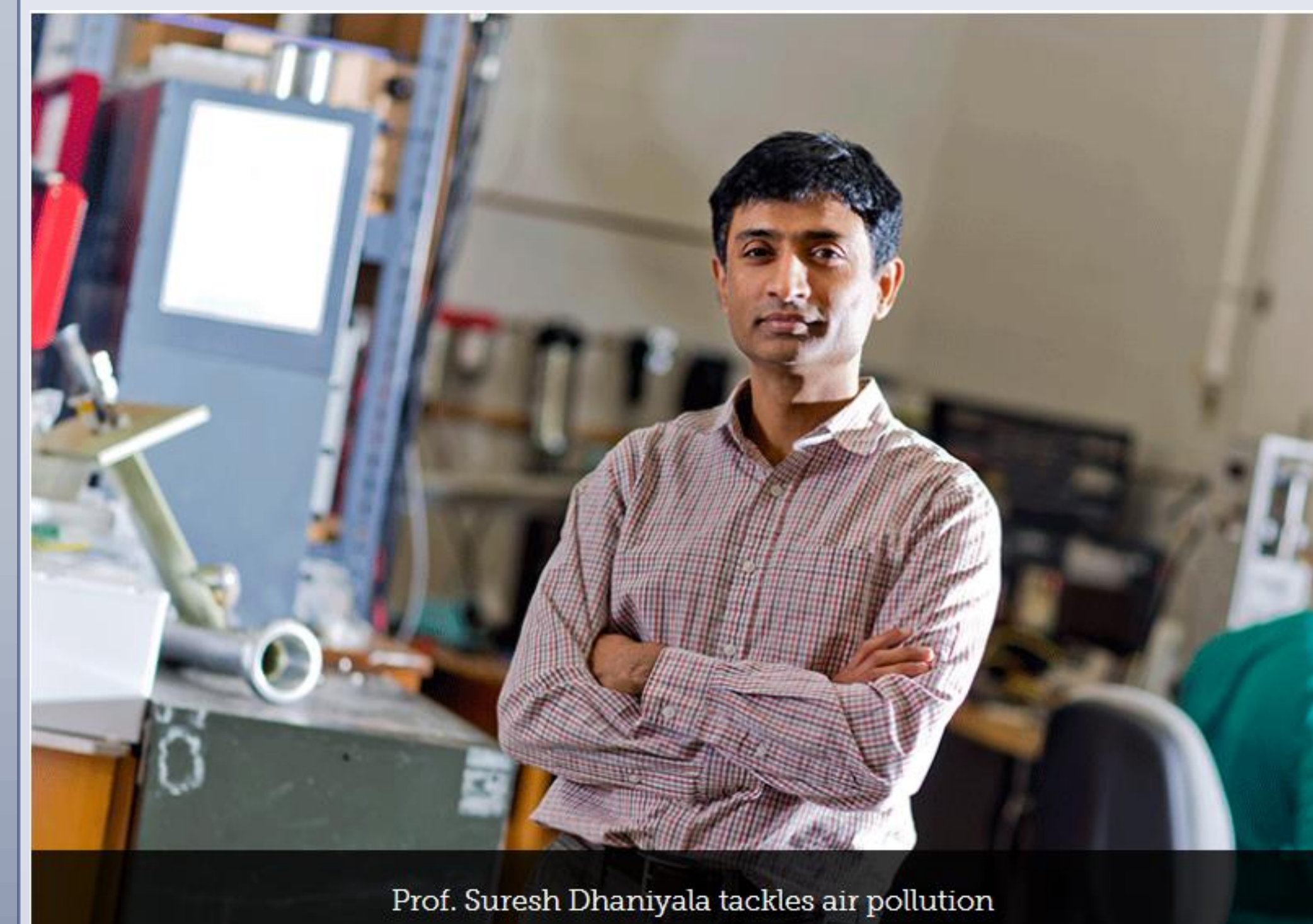
The Potsdam Housing Authority provides very low, low and middle income housing to residents of the Town and Village of Potsdam in the Evergreen Park and Midtown Apartments communities in Potsdam, NY.

Evergreen Park



Clarkson University

Clarkson University is a private, national research university located in Potsdam, NY. Clarkson is a proven leader in technological education and sustainable economic development. Clarkson investigators Tom Ortmeyer and Suresh Dhaniyala have expertise in energy and environmental challenges.



Prof. Suresh Dhaniyala tackles air pollution



Concept Solutions

This proposed project will

- Install an air-air heat pump system in a 4 unit building at VPHA
- Monitor heat pump performance on an hour by hour basis for one year
- Record heat pump energy performance as a function of outdoor temperature, wind, humidity and resident usage.
- Record indoor air quality with real time sensors
- Produce reports and guides to disseminate project results to other housing authorities and related entities.



(a) Duet air quality sensor and dashboard that will be made available to project participants and researchers.